THAI NGUYEN UNIVERSITY
UNIVERSITY OF INFORMATION AND COMMUNICATION TECHNOLOGY

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom – Happiness

COURSE SYLLABUS

(Training level: Undergraduate)

Vietnamese Course Title: Nhập môn Công nghệ phần mềm
English Course Title: Introduction to Software Engineering
Course Code: SOE232
Major: Information Technology
Training program: Information Technology
Version: 2021

1. General Information

- Number of credits: 3 credits (3 theoretical credits, 0 practice credit)

- Types of Knowledge:

General Education		Base core courses		Major core courses		Concentration courses		Others
Required □	Optional □	Required x	Optional □	Required □	Optional □	Required □	Optional □	Alternative Course of Graduation Thesis □

- Pre-requisite: General Informatics

- Co-requisite: None

2. Time Allocated

Total: 54 Periods	Theory: 33
	Discussion/ Group Presentation: 18/0
	Assignment/ Essay/ Practice: 0/0/0
	Number of Tests: 3 Number of Theory Tests: 3 Number of Practice Tests: 0 Number of Report: 0
	Self-Study: 105 Other Activities: 0

3. Departments in Charge: Department of Software Engineering – Faculty Information Technology

4. Lecturer's Information

No.	Lecturer name	Phone number	E-mail Address	Note
1	MSc. Hoang Thi Canh	0382324556	htcanh@ictu.edu.vn	Leader
2	MSc. Nguyen Hong Tan	0943252165	nhtan@ictu.edu.vn	Member
3	MSc. Pham Thi Thuong	0912838646	ptthuong@ictu.edu.vn	Member
4	MSc. Nguyen Thu Phuong	0982483420	ntphuong@ictu.edu.vn	Member
5	PhD. Quach Xuan Truong	0989090832	qxtruong@ictu.edu.vn	Member
6	MSc. Nguyen Thi Dung	0974322455	ntdung@ictu.edu.vn	Member

5. Facility Requirements: Having a projector in the classroom.

6. Subject Description: The course provides students with basic knowledge related to key subjects in the field of software engineering such as software development processes, tools and software development environments, from which students can can equip more in-depth knowledge of Software Engineering. The course enables students to build software systematically and methodically.

7. Objectives

Objectives	Description	PLOs	Proficiency level
G1	Apply the foundational knowledge in the field of Information Technology on methods and tools to implement the phases of the software life cycle.	1.3.7	3
	Understand the principles and methods of IT project management	1.4.2	3
G2	Use teamwork skills effectively. Apply motivation, plan activities, monitor, adjust and evaluate the group's performance. Have ability to write reports	3.1.2	2
	Apply communication skills, from forming coherent and logical ideas to supporting evidence, presenting, presenting, listening, actively exchanging, discussing and respecting the opinions of others.	3.2.1	3
G3	In the corporate and social context, the objectives of the project are identified. Apply technical methods and tools to collect and	4.2.1	3

	classify software requirements.		
	Apply processes, methods and tools to develop information technology systems	4.3.2	3

8. Learning Outcomes

Objectives	CLOs	Description of CLOs	PLOs	Proficiency level
G1	G1.1	Apply the basic software engineering knowledge in software development and realizing the impact of software engineering in scociety.	1.3.7	3
	G1.2	Apply knowledge of software engineering in deployment of stages of software lifecycle.	1.3.7	3
	G1.3	Know the project's goals and requirements and evaluate the feasibility of the project.	1.4.2	3
G2	G2.1	Have teamwork skills and responsibility to document study and homework completion; exploit and proficiently use supporting tools for document and report writing skills.	3.1.2	2
	G2.2	Have ability to represent, listen, respect other's opinions and actively discuss.	3.2.1	3
G3	G3.1	Apply technical methods and tools to collect and classify software requirements.	4.2.1	3
	G3.2	Apply processes, methods and tools to develop information technology systems	4.3.2	3

9. Scientific Ethics

Actively in theoretical classes in class, doing exercises assigned by the lecturer, fully participating in discussion hours in the spirit of improving self-discipline, self-control and completing regular tests. All acts of cheating in learning and assessment will be handled according to regulations

10. Detailed Contents

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
1,2,3	**Chapter 1: Overview of Software Engineering**					
	A/ Classroom learning content: 1.1 Overview of software engineering 1.2 Some basic concepts 1.3 Differences between software engineering and other fields of study	[1] [2] [3] [4] [5]	G1.1	3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 1 & related knowledge. - Learn the current trends of the field of software engineering. - Research standard in software engineering	[1] [2] [3] [4] [5]	G1.1	3	Self-study	Motivational assessment/Incorporating due diligence
4,5,6	**Chapter 1 (Continue):**					
	A/ Classroom learning content: 1.4 Ethical and Professional Responsibilities 1.5 Human factors and career classification in software engineering	[1] [2] [3] [4] [5]	G1.1	3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Answer the review questions at the end of chapter 1.	[1] [2] [3] [4] [5]	G1.1	3	Self-study	Motivational assessment/Incorporating due diligence
7,8,9	**Chapter 2: Software processes**					
	A/ Classroom learning content: 2.1 Software processes 2.2 Software process	[1] [2] [3] [4]	G3.2	3	Present; Raise and solve problems;	Evaluation by comments;

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	models	[5]				
	B/ Self-study - Learn the content of chapter 2 knowledge & related knowledge.	[1] [2] [3] [4] [5]	G3.2	3	Self-study	Motivational assessment/Incorporating due diligence
10,11, 12	**Chapter 2: Software processes** (continue)					
	A/ Classroom learning content: 2.3 Project planning 2.4 Case Study	[1] [2] [3] [4] [5]	G1.3	2	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 2 knowledge & related knowledge. - Answer the review questions at the end of chapter 2.	[1] [2] [3] [4] [5]	G1.3	2	Self-study	Motivational assessment/Incorporating due diligence
13,14, 15	**Discussion 1: Software project management plan**					
	A/ Classroom learning content: - Learn about the software life cycle. - State the problem to be solved - Study the main characteristics of different software process models. Select the appropriate model for the problem. - Project organization and software project management plan	[1] [2]	G1.1 G1.3 G2.1 G2.2 G3.2	3 2 3 3 3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
	B/ Self-study	[1]	G1.1	3	Self-study	Motivational

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	- Study the main contents of the CMM and CMMI standards. - Project scoping techniques, WBS techniques. - Research and select tools to support project management	[2]	G1.3 G2.1 G2.2 G3.2	2 3 3 3		assessment/Incorporating due diligence
16, 17, 18	**Chapter 3: Requirements engineering**					
	A/ Classroom learning content: 3.1 Overview of Requirements engineering 3.2 Software Requirements 3.3 Requirements Development	[1] [2] [3] [4] [5]	G1.2 G3.1	3 3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 3 & related knowledge. - Learn how to write standard software specification documents	[1] [2] [3] [4] [5]	G1.2 G3.1	3 3	Self-study	Motivational assessment/Incorporating due diligence
19,20,21	**Chapter 3 (Continue):**					
	A/ Classroom learning content: 3.4 Requirements management 3.5 Case study	[1] [2] [3] [4] [5]	G1.2 G3.1	3 3	Present; Raise and solve problems;	Evaluation by comments;
	Test No 1	[1] [2] [3] [4] [5]	G1.1 G1.2 G1.3 G3.1 G3.2	3 3 2 3 3	Written assessment	Evaluation by score

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	B/ Self-study - Learn the content of chapter 3 & related knowledge. - Answer the review questions at the end of chapter 3.	[1] [2] [3] [4] [5]	G1.2 G3.1	3 3	Self-study	Motivational assessment/Incorporating due diligence
22,23,24	**Discussion 2: Requirements engineering**					
	A/ Classroom learning content: - Introduce the problem (Case Study), complete learning about the business function of the problem. - Writing software specification documents. - Successfully install the necessary tools to do the exercise.	[1] [2] [3] [4] [5]	G1.2 G1.3 G2.1 G2.2 G3.1 G3.2	3 2 3 3 3 3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
	B/ Self-study Learn and prepare the necessary tools to do the exercise..	[1] [2] [3] [4] [5]	G1.2 G1.3 G2.1 G2.2 G3.1 G3.2	3 2 3 3 3 3	Self-study	Motivational assessment/Incorporating due diligence
25,26,27	**Chapter 4: Design software**					
	A/ Classroom learning content: 4.1 Overview of Design software 4.2 Software design process	[1] [2] [3] [4] [5] [6]	G1.2 G1.3 G2.1 G2.2 G3.1 G3.2	3 2 3 3 3 3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 4 & related knowledge	[1] [2] [3] [4]	G1.2 G1.3 G2.1 G2.2	3 2 3 3	Self-study	Motivational assessment/Incorporating due diligence

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	- System analysis and design methods: structure-oriented, object-oriented, component-oriented.	[5] [6]	G3.1 G3.2	3 3		
28,29,30	**Chapter 4 (Continue):**					
	A/ Classroom learning content: 4.2 Software design process (continue) 4.3 Case study	[1] [2] [3] [4] [5] [6]	G1.2	3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 4 & related knowledge - Answer the review questions at the end of chapter 4.	[1] [2] [3] [4] [5] [6]	G1.2	3	Self-study	Motivational assessment/Incorporating due diligence
31,32,33	**Chapter 5: Software Installation**					
	A/ Classroom learning content: 5.1 Overview 5.2 Programming method 5.3 Some programming rules 5.4 Organize, manage and share Source Code 5.5 Case study	[1] [2] [3] [4] [5] [6]	G1.2	3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 5 knowledge & related knowledge. - Answer the review questions at the end of chapter 5.	[1] [2] [3] [4] [5] [6]	G1.2	3	Self-study	Motivational assessment/Incorporating due diligence
34,35,3	**Discussion 3: Design**					

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
6	**analysis & Software installation**					
	A/ Classroom learning content: - System analysis and design. - Installation: Database, user interface, Setup software functions - Practice with Tools to organize, manage and share Source Code	[1] [2] [3] [4] [5] [6]	G1.2 G2.1 G2.2	3 3 3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
	B/ Self-study - Install/register an account and know how to use Git&GitHub. - What is system modeling? And why to model the system, distinguish the system models, be able to choose and apply the system models to each specific case etc.	[1] [2] [3] [4] [5] [6]	G1.2 G2.1 G2.2	3 3 3	Self-study	Motivational assessment/Incorporating due diligence
37,38,39	**Chapter 6: Software Testing**					
	A/ Classroom learning content: 6.1 Verification and validation of software 6.2 Overview 6.3 Software Testing Process 6.4 Software testing levels 6.5 Software Testing Techniques 6.6 Case study	[1] [2] [3] [4] [5]	G1.2	3	Present; Raise and solve problems;	Evaluation by comments;

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	Test No 2	[1] [2] [3] [4] [5]	G1.2	3	Written	Evaluation by score
	B/ Self-study - Learn the content of chapter 6 & related knowledge	[1] [2] [3] [4] [5]	G1.2	3	Self-study	Motivational assessment/Incorporating due diligence
40,41,42	**Discussion 4: Software Testing**					
	A/ Classroom learning content: - Present the selected test method for software testing. - Test planning - Design test cases and use test automation tools. - Test execution - Report the actual test results on the software, evaluate the results, and fix solutions (if any).	[1] [2] [3] [4] [5]	G1.2	3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
	B/ Self-study Research and use test automation tools	[1] [2] [3] [4] [5]	G1.2	3	Self-study	Motivational assessment/Incorporating due diligence
43,44,45	**Chapter 7: Software implementation and maintenance**					
	A/ Classroom learning content: 7.1 Overview 7.2 Implementation phase	[1] [2] [3] [4] [5]	G1.2	3	Present; Raise and solve problems;	Evaluation by comments;

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	7.3 Software maintenance 7.4 Tools and techniques to help 7.5 Case Study					
	B/ Self-study - Learn the content of chapter 7 & related knowledge. - Learn how to deploy, operate and monitor service operations on Amazon, or Microsoft cloud, ... - Learn tools to simulate the process of operation - monitoring - improvement - successful operation. - Answer the review questions at the end of chapter 7.	[1] [2] [3] [4] [5]	G1.2	3	Self-study	Motivational assessment/Incorporating due diligence
46,47,48	**Discussion 5: Configuration management & Maintenance, training, software completion**					
	A/ Classroom learning content: - Software configuration management. - Planning maintenance, training for users. - Complete software with full basic functions.	[1] [2] [3] [4] [5] [6]	G1.2 G2.1 G2.2	3 3 3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
	B/ Self-study Successfully installed/registered tools to support configuration	[1] [2] [3] [4]	G1.2 G2.1 G2.2	3 3 3	Self-study	Motivational assessment/Incorporating due diligence

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
	management and software maintenance. Proficient use of tools	[5] [6]				
49,50,51	**Chapter 8: Topics in software engineering**					
	A/ Classroom learning content: 8.1 IOT 8.2 Passwordless authentication 8.3 Virtual reality 8.4 Robotic process automation 8.5 Artificial Intelligence 8.6 Embedded Software	[1] [2] [3] [4] [5]	G1.1	3	Present; Raise and solve problems;	Evaluation by comments;
	B/ Self-study - Learn the content of chapter 8 knowledge & related knowledge. - Answer the review questions at the end of chapter 8.	[1] [2] [3] [4] [5]	G1.1	3	Self-study	Motivational assessment/Incorporating due diligence
52,53	**Discussion 6: Software User Manual**					
	A/ Classroom learning content: - Writing software manuals. - Final report on software project completion.	[1] [2] [3] [4] [5] [6]	G1.2 G2.1 G2.2	3 3 3	Student groups present and discuss according to the plan under the supervision of the lecturer	Evaluation by comments;
54	**Test No 3**	[1] [2]	G1.2 G1.3	3 2	Group presentation	Evaluation by score

Period	Contents	References	CLOs	Proficiency level	Teaching Methodology	Assessment Methodology
		[3] [4] [5] [6]	G2.1 G2.2	3 3	s	
	B/ Self-study Review and synthesize learned knowledge	[1] [2] [3] [4] [5] [6]	G1.2 G2.1 G2.2	3 3 3	Self-study	Motivational assessment/Incorporating due diligence

11. Student Assessment: 10 score Scale**.**

11.1. Test Plan:

No.	Contents	Time (Period)	CLOs	Proficiency level	Assessment methods	Assessment tools	Weight %
Attendance							**10**
Regular Test Score							**30**
1	Chapter 1,2,3	21	G1.1 G1.2 G1.3 G3.1 G3.2	3 3 2 3 3	Written assessment	Questions	10
2	Chapter 4,5,6	39	G1.2	3	Written assessment	Questions	10
3	Chapter 2-8	54	G1.2 G1.3 G2.1 G2.2	3 3 2 3 3	Group presentations	Questions	10
Final Score							**60**
	Chapter 1-8		G1.1 G1.2 G1.3 G2.1 G2.2 G3.1 G3.2	3 3 2 3 3 3 3	Essay reporting	Group topic and discussion	60

CLOs	Contents				Test method			
	Period 1-15	**Period 16-24**	**Period 25-48**	**Period 49-54**	**Progress test 1 - Practice**	**Progress test 2 Practice**	**Report Assessment III**	**Final exam Question Answering**
G1.1	x			x	x			x
G1.2	x	x	x	x	x	x	x	x
G1.3		x			x		x	x
G2.1	x	x	x	x			x	x
G2.2	x	x	x	x			x	x
G3.1		x			x			x
G3.2	x	x			x			x

11.2 Assessment Rubrics

*** Rubric 1: Attendance**

Criteria assessment	Weight (%)	Very Good (8,5-10)	Good (7,0-8,4)	Average (5,5-6,9)	Below Average (4,0-5,4)	Poor (0-3.9)
Level of class attendance	70	Full class attendance	Absence from 1-9%	Absence from 10-15%	Absence from 16-20%	Absence from 20% (Banned from exams)
Active learning and self-study	30	Participate in questions, discussions very actively, Complete all the assignments	Participate in asking questions, discussion , doing exercises quite actively	Participate in asking questions, discussions, and doing exercises less actively.	Participate in asking questions, discussions, doing exercises with teachers' help.	Only take part in class, but not participate in asking questions, discussions, doing exercises in active ways.

*** Rubric 2: Test 1** ***(****Allotted time: 50 minutes; Method: written; Total of Questions: 02; Score Scale: 10****)***

Evaluation criteria		Weight (%)	Quality Level Description				
Question	**CLOs**		**Very Good (8,5-10)**	**Good (7,0-8,4)**	**Average (5,5-6,9)**	**Below Average (4,0-5,4)**	**Poor (0-3.9)**
1	G1.1	50	Beautiful	Clearly	The	The	The

Evaluation criteria		Weight (%)	Quality Level Description				
Question	**CLOs**		**Very Good (8,5-10)**	**Good (7,0-8,4)**	**Average (5,5-6,9)**	**Below Average (4,0-5,4)**	**Poor (0-3.9)**
	G1.3		and clear presentation. Content that solves 90-100% of the requirements	presented. Content that addresses 70 to less than 90% of the requirements	presentation is relatively clear. Content that addresses between 50 and less than 70% of the requirements	presentation is not clear. Content that addresses between 40 and less than 50% of the requirements	presentation is not clear. Content that resolves less than 40% of the requirements
2	G1.2 G3.1 G3.2	50	Beautiful and clear presentation. Content that solves 90-100% of the requirements	Clearly presented. Content that addresses 70 to less than 90% of the requirements	The presentation is relatively clear. Content that addresses between 50 and less than 70% of the requirements	The presentation is not clear. Content that addresses between 40 and less than 50% of the requirements	The presentation is not clear. Content that resolves less than 40% of the requirements

*** Rubric 3: Test 2** ***(****Allotted time: 50 minutes; Method: written; Total of Questions: 02; Score Scale: 10****)***

Evaluation criteria		Weight (%)	Quality Level Description				
Question	**CLOs**		**Very Good (8,5-10)**	**Good (7,0-8,4)**	**Average (5,5-6,9)**	**Below Average (4,0-5,4)**	**Poor (0-3.9)**
1	G1.2	50	Beautiful and clear presentation. Content that solves 90-100% of the requirements	Clearly presented. Content that addresses 70 to less than 90% of the requirements	The presentation is relatively clear. Content that addresses between 50 and less than 70% of the requirements	The presentation is not clear. Content that addresses between 40 and less than 50% of the requirements	The presentation is not clear. Content that resolves less than 40% of the requirements
2	G1.2	50	Beautiful and clear presentation. Content that solves 90-	Clearly presented. Content that addresses 70 to less	The presentation is relatively clear. Content that	The presentation is not clear. Content that addresses	The presentation is not clear. Content

Evaluation criteria		Weight (%)	Quality Level Description				
Question	CLOs		Very Good (8,5-10)	Good (7,0-8,4)	Average (5,5-6,9)	Below Average (4,0-5,4)	Poor (0-3.9)
			100% of the requirements	than 90% of the requirements	addresses between 50 and less than 70% of the requirements	between 40 and less than 50% of the requirements	that resolves less than 40% of the requirements

*** Rubric 4: Group discussion**

Evaluation criteria		Weight (%)	Quality Level Description				
Criteria	CLOs		Very Good (8,5-10)	Good (7,0-8,4)	Average (5,5-6.9)	Below Average (4.0-5.4)	Poor (0-3.9)
Form report	G2.1	10	Beautiful, clear, no misspelling	Beautiful, clear, still less than 10 misspellings	Beautiful, clear, still 11 -20 misspellings	Not beautiful, clear, still over 20 misspellings	Not pretty, not clear, minuscule, a lot of misspellings
Content report	G1.2 G1.3	40	Meet 90-100% of the requirements, expanded, with references cited	Response 80-90% request, expanded, citing incomplete references	Satisfied 70-80% of requirements	Meet 50-60% of requirements	Answer less than 50% of requirements
Skill present	G2.2	5	Clear, confident, convince, have audience communication	Clear, confident, have audience communication	Clear, have little audience communication	Wordless, unconfident, little communication listener	Whisper, not confident
Answer questions	G1.2 G1.3	40	Right answer all of question	Right answer over 2/3 questions	Right answer over 1/2 questions	Right answer over 1/3 questions	Right answer less than 1/3 questions
Participation	G2.2	5	100% participation	~ 80% participation	~ 60% participation	50% participation	Less than 50% participation

*** Rubric 5: Final exam** ***(****Method: Report Writing; Work and present in groups****)***

Evaluation criteria		**Weight (%)**	**Quality Level Description**				
Criteria	**CLOs**		**Very Good (8,5-10)**	**Good (7,0-8,4)**	**Average (5,5-6.9)**	**Below Average (4.0-5.4)**	**Poor (0-3.9)**
Form report	G2.1	5	Beautiful, clear, no misspelling	Beautiful, clear, still less than 10 misspellings	Beautiful, clear, still 11 -20 misspellings	Not beautiful, clear, still over 20 misspellings	Not pretty, not clear, minuscule, a lot of misspellings
Content report	G1.1 G1.2 G1.3 G3.1 G3.2	50	Meet 90-100% of the requirements, expanded, with references cited	Response 80-90% request, expanded, citing incomplete references	Satisfied 70-80% of requirements	Meet 50-60% of requirements	Answer less than 50% of requirements
Skill present	G2.2	5	Clear, confident, convince, have audience communication	Clear, confident, have audience communication	Clear, have little audience communication	Wordless, unconfident, little communication listener	Whisper, not confident
Answer questions	G1.1 G1.2 G1.3 G3.1 G3.2	35	Right answer all of question	Right answer over 2/3 questions	Right answer over 1/2 questions	Right answer over 1/3 questions	Right answer less than 1/3 questions
Participation	G2.2	5	100% participation	~ 80% participation	~ 60% participation	50% participation	Less than 50% participation

12. Reading List

A. Main Syllabus

[1] Ian Sommerville (2015), *Software Engineering*, 9th Edition, Addison – Wesley.

[2] Department of Software Engineering, Faculty of Information Technology, Thai Nguyen University of Information and Communication Technology (2022), *Introduction to Software Engineering Lecture.*

B. References

[3] Ivan Marsic (2012), *Software Engineering*, Rutgers University, New Brunswick, New Jersey.

[4] Rajib Mall (2014), *Fundamentals of Software Engineering, Fourth Edition*, PHI Learning Private Limi ted, Delhi.

[5] Eric J. Braude and Michael E. Bernstein (2016), *Software Engineering - Modern Approaches, Second Edition*, Waveland Press, Inc.

[6] Len Bass, Paul Clements, Rick Kaman (2015) *Software Architecture in Practice* (3rd), Addison - Wesley.

13. 1st Approval Date: September 5th, 2021

14. Competent Authority Approval: Thai Nguyen University of Information and Communication Technology

Vice Rector	Dean	Head of Department	Composer Team
PhD. Do Dinh Cuong	PhD. Nguyen Hai Minh	MSc. Nguyen Hong Tan	ThS. Hoàng Thị Cảnh ThS. Nguyễn Hồng Tân ThS. Phạm Thị Thương ThS. Nguyễn Thu Phương TS. Quách Xuân Trường ThS. Nguyễn Thị Dung