



Shared Prosperity Dignified Life



الشبكة الأكاديمية للحوار التنموي
Academic Network for Development Dialogue
ANDD



ANDD Research fundamentals, 2nd cohort 2024-2025: final revised program

دورة أساسيات البحث العلمي للباحثين وطلاب الدراسات العليا في العالم العربي: النسخة الثانية

Course Title: Research Fundamentals for Early Researchers and Advanced Students in the Arab World, 2nd Cohort

Language: AR/EN

Format: Online

Time: 19:00 – 21:00 PM (Doha Time)

Course Duration: 1 October 2024 – 25 February 2025

Hours: 1.5-2 hours for each session

Course Description: This course in its second edition is an initiative of the Academic Network for Development Dialogue (ANDD) and is designed to equip researchers and students in the Arab World with the knowledge and skills essential for high-quality research. Participants will gain a comprehensive understanding of the research process through an in-depth exploration of formulating answerable research questions, developing testable hypotheses, and designing relevant research plans. The course emphasizes the importance of publishing findings and adhering to ethical standards. By combining lectures and interactive discussions, learners will acquire the skills necessary to conduct impactful research in their respective fields. This holistic approach ensures that participants are well-equipped to contribute valuable insights and advancements within their disciplines.

النسخة الثانية من "دورة أساسيات البحث العلمي للباحثين وطلاب الدراسات العليا في العالم العربي" مصممة لتزويد الباحثين والطلاب في العالم العربي بالمعرفة والمهارات الأساسية لإجراء بحوث عالية الجودة. تسعى الدورة لاكتساب المشاركين فهماً شاملاً لعملية البحث من خلال طريقة صياغة أسئلة بحث قابلة للإجابة، وتطوير فرضيات قابلة للاختبار، وتصميم خطط بحثية ذات صلة.



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Course Outcomes: By the end of this course, learners will be able to

- 1 Formulate clear and focused research questions
- 2 Develop testable hypotheses
- 3 Conduct a comprehensive literature review
- 4 Design a research methodology appropriate to their research question(s)
- 5 Collect and analyze data using appropriate tools and techniques
- 6 Interpret research findings and draw valid conclusions
- 7 Write and format research papers suitable for publication
- 8 Understand and adhere to ethical guidelines in research
- 9 Present research findings effectively

تهدف الدورة إلى مساعدة الباحثين إلى مساعدة المشاركين على:

- 1 صياغة أسئلة بحث واضحة.
- 2 تطوير فرضيات قابلة للاختبار.
- 3 إجراء مراجعة شاملة للأدبيات.
- 4 تصميم منهجية بحث مناسبة لسؤال (أسئلة) البحث الخاصة بهم.
- 5 جمع وتحليل البيانات باستخدام الأدوات والتقنيات المناسبة.
- 6 تفسير نتائج البحث واستخلاص استنتاجات صحيحة.
- 7 كتابة وتنسيق أوراق بحث مناسبة للنشر.
- 8 فهم وإتباع المبادئ التوجيهية الأخلاقية في البحث.
- 9 تقديم نتائج البحث بشكل فعال

Attendance: Learners with 70 percent attendance or higher will receive a Certificate of Course Completion.



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Unit	Title	Content	Track	Date
			Natural Sciences (NS) العلوم الطبيعية Social sciences (SS) العلوم الإجتماعية	
Plenary Session	<ul style="list-style-type: none"> Empowering the Next Generation: Fostering a Culture of Research in Arab Universities Course platform https://elearn.unescwa.org/course/view.php?id=26 		Both جلسة عامة	1/10 Tuesday
Module 1	Understanding Research مفاهيم البحث	<ul style="list-style-type: none"> Definition of research Purpose of RQs in SS Identifying research gaps in SS Crafting clear & concise RQs (that are doable!) Understanding key terms & concepts 	Both جلسة عامة	8/10 Tuesday



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Module 1		<ul style="list-style-type: none"> Structure & components of a research/article/paper/publication for social sciences 	Social Sciences العلوم الإجتماعية	13/10 Sunday
		<ul style="list-style-type: none"> Structure & components of a research article/paper/publication for natural sciences 	Natural Sciences العلوم الطبيعية	15/10 Tuesday
Module 2	Formulating Research Questions (RQs) صياغة أسئلة البحث:	<ul style="list-style-type: none"> Purpose of RQs Identifying research gaps Crafting clear & concise RQs (that are doable!) Practice identifying & improving weak RQs 	Natural Sciences العلوم الطبيعية	22/10 Tuesday



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Module 3	Literature Reviews مراجعة الأدبيات	<ul style="list-style-type: none"> ● Lit. Review <i>for</i> a research article vs. Review of Literature <i>as</i> an article ● Identifying relevant sources ● Synthesizing and integrating literature to identify gaps in the literature and polish our research questions ● Strategies for critically evaluating literature 	Both جلسة عامة	29/10 Tuesday
Module 3	Citation Management إدارة الاستشهادات المرجعية	<ul style="list-style-type: none"> ● Definition of referencing ● Importance of referencing in research ● APA referencing methodologies based on source ● Citation management tools: Zotero, Endnote, RefWorks and Mendeley.. ● Demo: Zotero 	Both جلسة عامة	5/11 Tuesday
Module 4	Research Methodologies تصميم ومنهجية البحث	<ul style="list-style-type: none"> ● Understanding original research design in social sciences ● Allowing RQs to guide research methods & approaches 	Social Sciences العلوم الإجتماعية	10/11 Sunday



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Module 4		<ul style="list-style-type: none"> Understanding research design in natural sciences Allowing RQs to guide research methods & approaches 	Natural Sciences العلوم الطبيعية	12/11 Tuesday
Module 4		<ul style="list-style-type: none"> Types of reviews (systematic, thematic, scoping, methodological, meta-analysis, etc.) Systematic Reviews and Meta analysis 	Natural Sciences العلوم الطبيعية	19/11 Tuesday
Module 4	Sampling العينات	<ul style="list-style-type: none"> Introduction to sampling Why sampling is important in research Population vs sample Sampling frame Sampling techniques and methods Sampling errors and Bias Sampling methods and generalizability 	Both جلسة عامة	26/11 Tuesday
Module 5	Data collection	<ul style="list-style-type: none"> Data collection methods: Qualitative, and mix-method approaches 	Both	1/12 Sunday

	جمع البيانات	<ul style="list-style-type: none"> Focus groups 	جلسة عامة	
		<ul style="list-style-type: none"> Data collection methods: Quantitative Data collection 	Both جلسة عامة	3/12 Tuesday
Module 5	Data analysis: تحليل البيانات	<p>Basic Statistics:</p> <ul style="list-style-type: none"> Definition of statistics Importance of statistics in research <p>II. Descriptive Statistics</p> <ul style="list-style-type: none"> Measures of central tendency (mean, median, mode) Measures of variability (range, variance, standard deviation) <p>III. Probability</p> <ul style="list-style-type: none"> Basic concepts (events, sample space, outcomes) 	Both جلسة عامة	10/12 Tuesday

		<ul style="list-style-type: none"> ● Probability rules (addition rule, multiplication rule) <p>IV. Sampling and Sampling Distributions</p> <ul style="list-style-type: none"> ● Types of sampling (random, stratified, cluster) ● Central Limit Theorem and its implications ● Sample size and power calculations <p>V. Inferential Statistics</p> <ul style="list-style-type: none"> ● Hypothesis testing <ul style="list-style-type: none"> ○ Null and alternative hypotheses ○ Steps in hypothesis testing (choosing a test, setting significance level, calculating test statistic, making a decision) ● Confidence intervals <ul style="list-style-type: none"> ○ Interpretation and construction 		
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<p>Module 5</p>		<p>Advance statistics:</p> <p>I.Odds Ratio and Relative Risk (Basic Introduction)</p> <ul style="list-style-type: none"> ● Definitions and Differences: <ul style="list-style-type: none"> ○ Odds Ratio (OR): Relative Risk (RR): When to Use OR vs. RR: ○ Calculating OR and RR <p>Multivariate Analysis</p> <ul style="list-style-type: none"> ● Regression analysis <ul style="list-style-type: none"> ○ Simple linear regression ○ Multiple regression ● Logistic regression <ul style="list-style-type: none"> ○ Binary logistic regression ○ Multinomial logistic regression <p>III. Analysis of Variance (ANOVA)</p> <ul style="list-style-type: none"> ● One-way ANOVA ● Factorial ANOVA ● ANOVA assumptions and interpretation 	<p>Both</p> <p>جلسة عامة</p>	<p>17/12</p> <p>Tuesday</p>
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		IV. Non-Parametric Statistics <ul style="list-style-type: none"> When to use non-parametric tests Common non-parametric tests (Mann-Whitney U test, Kruskal-Wallis test) 		
Module 6	Data collection tools أدوات جمع البيانات	Survey development process <ul style="list-style-type: none"> Developing clear and concise survey questions Survey tools and platforms Survey questions validity and reliability check Pilot testing and refining the survey Online survey tools (demo) Common approaches for survey research analysis 	Both جلسة عامة	31/12



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Module 6	Drawing Conclusions & Implications استخلاص النتائج والاستنتاجات	<ul style="list-style-type: none"> ● Interpreting research findings ● Drawing valid conclusions ● Discussing implications and recommendations ● Identifying limitations of the research 	Both جلسة عامة	7/1
Module 7	Understanding Academic Writing as a Process الكتابة الأكاديمية كعملية	Writing a successful research proposal	Both جلسة عامة	14/1
Module 7	Mechanics of writing تقن تقنيات الكتابة	<ul style="list-style-type: none"> ● Learning to write for readers ● Identifying your personal writing approach ● The stages of writing (planning, drafting, editing, proofreading, formatting) ● Techniques to maintain writing progress ● Utilizing early readers, middle readers, & expert readers to maintain writing progress 	Both جلسة عامة	21/1



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		<ul style="list-style-type: none"> Cultural biases and research fatigue 		
Module 7	Publishing النشر	<ul style="list-style-type: none"> Formatting research papers suitable for publication Identifying target journals, Understanding the peer review process and Strategies for getting published. Tips and hints on how to publish your paper successfully 	Both جلسة عامة	28/1
Module 8	Ethics & Research أخلاقيات البحث العملي	Ethical Considerations in Conducting Research: human element in research: <ul style="list-style-type: none"> How research interacts with human participants Brief case studies of ethical dilemmas in research involving human subjects. Informed consent in research ethics Special concerns with vulnerable populations 	Both جلسة عامة	4/2



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		<ul style="list-style-type: none"> Ethical Considerations and Research Design 		
Module 8	Ethical Considerations in Research Writing:	<ul style="list-style-type: none"> Impact of unethical writing practices on research credibility and scientific progress Ethical Considerations in Research Dissemination Ethical considerations in data reporting 	Both جلسة عامة	11/2
Module 8	Intellectual property الملكية الفكرية	<ul style="list-style-type: none"> What is intellectual property? And why? Real-world scenarios: Case studies of researchers encountering IP issues Copyright Creative Common Open Science 	Both جلسة عامة	18/2
Module 9	AI and research الذكاء الاصطناعي والبحث	AI for Research conduct and writing <ul style="list-style-type: none"> How AI can help the researcher in research ideation, methodology and implementation? The ethical use of AI in Research 	Both جلسة عامة	25/2



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		<ul style="list-style-type: none">● Benefits and Considerations of using AI in Research<ul style="list-style-type: none">- Ethics of use● AI and research writing: Tools and techniques:		
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