

ARTICLE 1 (Establishment)

The National Research Doctorate in Artificial Intelligence for Agrifood and Environment, XL cycle, is established, with its administrative headquarters at the University of Naples Federico II, subject to accreditation by the Ministry of University and Research. A public competition is announced for admission to the aforementioned doctoral program. Annex A), an essential part of this decree, specifies:

- a) the number of scholarships available in the competition;
- b) the affiliated entities and the number of scholarships financed or co-financed by them;
- c) the duration, the administrative headquarters department of the doctoral program, and the course coordinator;
- d) the schedule for the examination sessions;
- e) the web address where the organization of the course, research topics, and educational activities are detailed;
- f) the procedures for drafting the research project.

The positions with scholarships funded under Ministerial Decree No. 629 of April 24, 2024, and Ministerial Decree No. 630 of April 24, 2024, are activated subject to approval of ministerial funding and within the framework of the specified thematic areas indicated in the aforementioned decrees, as well as in compliance with the eligibility criteria outlined in Articles 7, 8, 9, and 10 of Ministerial Decree No. 629 of April 24, 2024, and Article 7 of Ministerial Decree No. 630 of April 24, 2024. Positions with scholarships under Ministerial Decree No. 630/2024 will also be activated subject to the signing of agreements by co-financing entities.

Positions covered by scholarships entirely funded by external entities based on a letter of intent will be activated subject to the signing of the respective agreement by the funding entity by August 31, 2024.

Positions may be increased due to funding from public or private entities. Authorization to conclude the relevant agreement must occur before the start of the examination sessions for the doctoral program for which the funding is intended. The agreement may specify particular aspects of the study and training program.

By specific Rectoral Decree, to be published on the University's website at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>, information will be provided regarding companies co-financing scholarships activated under Ministerial Decrees 630 of April 24, 2024, as detailed in Annex A) of the call.

By specific Rectoral Decree, to be published on the University's website at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>, authorization will be granted for the possible activation of additional positions with scholarships funded under Ministerial Decree No. 630 of April 24, 2024, and/or additional positions with scholarships funded by external entities.

The publication of the schedule in this call serves as official notification to interested parties. Candidates will not receive any further written communication regarding the examination dates. Any changes to the schedule will be promptly communicated on the University's website at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>, which candidates are therefore required to consult regularly.

ARTICLE 2 (Admission Requirements)

Candidates may participate in the competition, regardless of age or citizenship, if they hold one of the following qualifications:

- specialist or master's degree awarded under Ministerial Decree No. 509/1999 and subsequent amendments and/or additions;
- degree awarded under previous educational regulations (with a duration of at least four years);
- Equivalent academic degree obtained from foreign universities.

Additionally, those who obtain the required bachelor's degree by October 31, 2024, may also participate in the competition, failing which they will forfeit their admission to the course.

All candidates are conditionally admitted to the competition procedure. The Administration may, at any time, issue a motivated decision to exclude candidates who do not meet the prescribed requirements; this decision will be communicated to the individual by registered mail with return receipt.

ARTICLE 3 (Degree Obtained Abroad)

The suitability of degrees obtained from foreign universities for admission to the selection process shall be determined solely by the selection committee. In such cases, candidates must submit, according to the procedures outlined in the following Article 4, their degree certificate indicating the exams taken and the curriculum followed, as well as any additional documents deemed necessary to evaluate the suitability of the degree. All documents must be translated if they are not already in English.

ARTICLE 4 (Application for Admission and Qualifications)

Applications to participate in the competition must be submitted **exclusively through the online procedure available at: <https://pica.cineca.it/unina/> no later than 12:00 pm (Italian time) on July 8th, 2024.**

To participate in the competition, the fee of **€ 50,00 (fifty euro)** is **mandatory**; it must be made exclusively through the methods indicated in the procedure, **under penalty of exclusion. This fee is valid only for the specific doctoral competition for which the application is submitted and will not be refunded under any circumstances.**

Applications submitted contrary to the provisions of this Article will not be considered.

THE DOCUMENTATION REGARDING THE DEGREES AND THE PROJECT MUST BE SUBMITTED EXCLUSIVELY VIA UPLOAD DURING THE APPLICATION SUBMISSION PHASE.

The candidate may indicate their preference for up to three scholarship locations when submitting their application for participation in the competition. **These preferences are not binding for the allocation of scholarships by the doctoral committee.**

The doctoral committee, respecting the ranking order and taking into account the preferences expressed, will decide on the allocation of scholarships to qualified winners. The scholarships will then be awarded by Rectoral Decree after any reassignment procedures.

For the ASSESSMENT OF QUALIFICATIONS, candidates must submit the following documentation, following the instructions provided below:

A) Candidates with Italian degrees:

1. grade point average and weighted average based on the ECTS credits of the exams taken for the specialist/master's degree, and any other elements considered relevant for evaluation (e.g., list of exams with their grades). These qualifications must be presented through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;
2. Grade point average and weighted average based on the ECTS credits of the exams taken for the bachelor's degree, and any other elements considered relevant for evaluation (e.g., list of exams with their grades). These qualifications must be presented through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;
3. Master's thesis and any publications accompanied by a self-certification declaration concerning their conformity to the original;
4. Any other qualifications (e.g., scholarships, additional academic titles) through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;

5. Any recommendation letters, which must be submitted as explained below.

B) Candidates currently graduating in Italy

1. Weighted average based on ECTS credits of grades obtained in exams for the specialist/master's degree, and any other elements considered relevant for evaluation (e.g., list of exams with their grades). These qualifications must be presented through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;
2. Grade point average and weighted average based on ECTS credits of grades obtained in exams for the bachelor's degree, and any other elements considered relevant for evaluation (e.g., list of exams with their grades). These qualifications must be presented through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;
3. Any publications accompanied by a self-certification declaration concerning their conformity to the original;
4. Any other qualifications (e.g., scholarships, additional academic titles) through a self-certification declaration, according to Article 46 of Presidential Decree No. 445/2000 and subsequent amendments;
5. Any recommendation letters from scholars, which must be submitted as explained below.

C) Candidates graduated abroad

1. Degree certificate for both undergraduate and graduate levels, indicating exams taken and curriculum followed (certificate must be translated if not in English);
2. Master's thesis and any publications accompanied by a self-certification declaration concerning their conformity to the original;
3. Any other qualifications held (scholarships, attendance certificates from postgraduate courses, titles related to research activities, scores from standardized tests used for university course admissions internationally or nationally, etc.);
4. Recommendation letters from scholars, to be submitted as explained below;
5. Curriculum vitae.

D) Candidates currently graduating abroad

1. Academic certificate, indicating exams taken and curriculum followed (certificate must be translated if not in English);
2. Any publications accompanied by a self-certification declaration concerning their conformity to the original;
3. Any other qualifications held (scholarships, attendance certificates from postgraduate courses, titles related to research activities, scores from standardized tests used for university course admissions internationally or nationally, etc.);
4. Recommendation letters from scholars, to be submitted as explained below;
5. Curriculum vitae.

The application must be printed, signed, and uploaded following the instructions described in the procedure, attaching a copy of a valid identity document. Failure to sign and/or provide a valid identity document will result in exclusion from the selection process.

After completing the application, candidates can request letters of reference by filling out the appropriate section, by the application deadline (**July 8th, 2024**, 12:00 PM Italian time). The

referee will be notified of the request after the final closure of the application. The referee will be automatically notified by the system and must personally complete the reference letter template provided in the online procedure and submit it by **July 10th, 2024, 12:00 PM** (Italian time).

The Administration assumes no responsibility for non-receipt of documentation due to errors attributable to the candidate, or any issues arising from third-party actions, force majeure, or unforeseen circumstances.

Candidates with disabilities, who declare in the online procedure that they require assistance, will be provided with instructions on how to submit their request in accordance with current legislation (Law No. 104/1992 as amended and supplemented by Laws No. 17/1999 and No. 53/2000, and subsequent amendments).

ARTICLE 5 (Examination Procedures)

The examination procedures, including **assessment of qualification, research project, and oral examination**, aim to ensure a fair comparative assessment of candidates and to ascertain their preparation and aptitude for scientific research.

Candidates must also demonstrate a good knowledge of the English language. The qualifications and topics covered in the examinations must be relevant to the doctoral course's project themes.

The Examination Committee has a total of one hundred points available for evaluation, distributed as follows:

- 20 points for qualifications,
- 30 points for the research project,
- 50 points for the oral examination.

Qualifications evaluated and their corresponding scores include:

- The entire academic career, using as evaluation criteria the final grade or weighted average based on ECTS credits of grades obtained in exams, and potentially other criteria deemed suitable by the Committee: up to a maximum of 15 points;
- Scientific publications, master's thesis, and other relevant qualifications (awards, patents, scholarships, etc.), also considered in light of any recommendation letters from scholars: up to a maximum of 5 points.

Candidates who score at least 8/20 in the qualifications evaluation and at least 18/30 in the research project evaluation are eligible for the oral examination. The oral examination is considered passed only if the candidate scores at least 30/50.

The final score is the sum of points obtained in the qualifications evaluation, research project, and oral examination.

Candidates must present a valid identification document (ID card, passport, driver's license with photo, firearm license, or identification cards with photo and stamp or equivalent) to participate in the examination. Failure to appear on the scheduled date, time, and location for any part of the examination will be considered as withdrawal from that particular examination, regardless of the reason.

The oral examination will be conducted remotely via Teams platform, ensuring proper identification of the candidate.

ARTICLE 6 (Judging Committees and Competition Procedures)

The judging committee, which will be published on the University portal at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>, is appointed by Rectoral Decree pursuant to Article 13 of the University Regulation governing doctoral programs.

At its first meeting, the examining committee establishes the criteria and evaluation methods for the competition tests, to be formalized in the respective minutes, in order to assign scores and judgments to individual tests.

Before the start of the competitive exams, the members of the Commission, upon reviewing the list of participants, sign a declaration stating that there are no situations of incompatibility between them and the competitors, in accordance with Articles 51 and 52 of the

Italian Civil Procedure Code.

The oral exams must be conducted in a manner that ensures maximum publicity and participation.

ARTICLE 7 (Merit Rankings)

The merit ranking will be formulated in descending order based on the total score achieved by each candidate in the individual examinations, and approved by Rectoral Decree. In case of a tie in scores between two or more candidates, preference will be given to the younger candidate in age.

Candidates will be declared winners in the order of the ranking up to the number of available positions in the competition. If a candidate fails to accept within the deadline specified in the following Article 8, 3rd paragraph, or withdraws before the course commencement date, replacements will be selected in the order of the ranking.

ARTICLE 8 (Admission to the Course)

The Rectoral Decree approving the merit ranking will be published on August 27, 2024, in the Official Register of the University, available on the University's website at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>.

This publication will serve as the official notification of competition results; winners will not receive direct notifications. Within 5 days from the publication of the aforementioned Rectoral Decree, winners must submit their application for enrollment in the course to the Office of Doctorates and Scholarships, using the methods specified in conjunction with the Rectoral Decree, under penalty of forfeiture.

Winners holding a foreign academic degree that has not been previously recognized as equivalent to an Italian Master's degree must also submit or have delivered a translated and legalized degree certificate, accompanied by a declaration of equivalence issued by the competent Italian representation in the country where the institution that issued the degree is located. For further information, refer to the Ministry of University and Research website at <https://www.studiare-in-italia.it/studentistranieri/>.

Enrollment requires payment of a regional fee for the right to study amounting to €140.00 (payment methods will be available on the University portal at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>).

Enrollment cannot occur beyond the deadline indicated in the 3rd paragraph of this article. Once the enrollment deadline specified in the 3rd paragraph of this article has elapsed, any remaining available positions will be offered to qualified candidates.

To this end, the list of eligible candidates entitled to enroll and the deadline by which they must do so will be published on the University portal at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>.

This publication will serve as official notification; eligible candidates will not receive individual notifications.

Those eligible who fail to enroll by the deadline specified in the notice published as described above will be considered to have tacitly withdrawn and will definitively forfeit their right to enrollment. Any such additional selections will be published no later than October 31st, 2024.

ARTICLE 9 (Granting, Enjoyment, and Payment of Scholarships)

The scholarships are annual and are renewed on condition that the doctoral student has completed the program of activities planned for the previous year and has been admitted to the following academic year. The scholarships are thematically linked, therefore the assigned doctoral students are required to carry out doctoral activities on the specific research theme at a designated location, as listed in Annex A). The research themes are listed on the university's website at <http://www.unina.it/didattica/post-laurea/dottorati-di-ricerca/bandi-di-ammissione>.

The Academic Board, respecting the ranking order and considering the preferences expressed during the application, decides the allocation of scholarships to the eligible winners. The annual gross amount of the scholarship is **€ 16,243.00 (sixteen thousand two hundred forty-three euros and zero cents)**, inclusive of social security contributions payable by the

recipient, as established by Article 1 of Ministerial Decree No. 247 of February 23, 2022. The scholarship will be disbursed in arrears in monthly installments, and for its enjoyment, the overall personal gross annual income limit is set at €16,243.00 (sixteen thousand two hundred forty-three euros and zero cents). This refers to the calendar year with the highest disbursement of the scholarship. This income calculation includes income from assets as well as any recurring emoluments, excluding those of an occasional nature. Naturally, the scholarship amount itself is excluded from this income calculation. The scholarship is increased by fifty percent for the period of research activity carried out abroad, not exceeding a total of twelve months. This period can be extended up to a maximum total of eighteen months for joint doctoral programs with foreign institutions or programs activated in an associated form. This increase cannot be used in the candidate's country of origin or the country where they reside. The doctoral student is required to repay the scholarship installments already received, even in case of withdrawal from the course, if they exceed the income limit stipulated in the preceding paragraph or if they are in any of the incompatibility cases as per the subsequent article 10. Those who have already benefited from a scholarship for a doctoral course, even for only half of its duration, cannot receive it a second time. Those who, as recipients of scholarships funded under the National Recovery and Resilience Plan (PNRR) for the XXXVIII and XXXIX cycles, have renounced them, cannot be recipients of scholarships funded under the PNRR for the XL cycle. The scholarships cannot be combined with any other scholarships for any reason, except those granted by national or foreign institutions for enhancing training or research activities of scholarship holders with international stays.

The disbursement of the scholarship is tied to periods of attendance and effective study and research activities. In addition to the scholarship, each doctoral student is assured an annual budget for research activities in Italy and abroad, amounting to 20% of the annual scholarship amount. Upon registration, a presumptive declaration regarding the overall gross personal income and absence of incompatibility causes must be submitted. This declaration must be repeated at the beginning of each subsequent academic year of course attendance. Scholarship recipients must also arrange for the establishment of an INPS (Italian National Social Security Institute) contribution position by enrolling in its "Gestione separata" (Separate Management). Enrollment procedures and related forms can be found on the institution's website at www.inps.it. The tax benefits provided for in Article 6, paragraph 6, of Law No. 389 of November 30, 1989, apply to the scholarship.

ARTICLE 10

(Obligations, Incompatibilities, Suspensions)

The doctoral program requires exclusive and full-time commitment, subject to the provisions of subsequent paragraph 7 and Article 8, paragraph 2, letter b) of the University Regulations governing doctoral studies. It is the responsibility of the board of professors to authorize doctoral candidates to engage in paid activities, ensuring compatibility with the effective completion of educational (teaching and research) activities related to the program. Specifically, it remains unchanged that, for scholarship recipients, paid activities must be limited to those that contribute to acquiring skills related to the doctoral program's educational scope. For doctoral candidates without scholarships, any incompatibility arising from employment must be assessed on a case-by-case basis, without detriment to constitutionally protected rights such as the right to education.

Doctoral candidates are obliged to attend and complete all scheduled activities, submit required oral or written reports, and fulfill all other obligations stipulated by the board of professors of the doctoral program.

Recipients of scholarships funded under D.M. 629/2024 and D.M. 630/2024 are also required to comply with the following obligations:

a) for D.M. 630/2024 scholarships (Article 7): spend a study and research period, even non-continuous over the three-year period, in a company, from a minimum of six (6) months up to a maximum of eighteen (18) months, and abroad from a minimum of six (6) months up to the maximum period provided in Article 9, paragraph 3, of D.M. No. 226/2021;

b) for D.M. 629/2024 digital and environmental transitions (Article 7): spend a study and research period, even non-continuous over the three-year period, in a company or research center, from a minimum of six (6) months up to a maximum of twelve (12) months, and abroad from a minimum of six (6) months up to the maximum period provided in Article 9, paragraph 3, of D.M. No. 226/2021;

c) for D.M. 629/2024 PNRR Research (Article 8): spend a study and research period abroad, even non-continuous over the three-year period, from a minimum of six (6) months up to the maximum period provided in Article 9, paragraph 3, of D.M. No. 226/2021;

d) for D.M. 629/2024 PNRR Public Administration (Article 9): spend a study and research period, even non- continuous over the three-year period, at a Public Administration, company, or research center, from a minimum of six (6) months up to a maximum of twelve (12) months, and abroad from a minimum of six (6) months up to the maximum period provided in Article 9, paragraph 3, of D.M. No. 226/2021;

e) for scholarships under D.M. 629/2024 Cultural Heritage (Article 10): spend a study and research period, even non-continuous over the three-year period, at Public Administrations, including museums, institutes and institutions of the Ministry of Culture (e.g., Foundation School of Cultural Heritage and other high training Schools), archives, libraries, from a minimum of six (6) months up to a maximum of twelve (12) months, and abroad from a minimum of six (6) months up to the maximum period provided in Article 9, paragraph 3, of D.M. No. 226/2021;

f) account for the activities carried out through the dedicated online platform (<http://dottorati.mur.gov.it>), with a semi-annual report indicating the time commitment (broken down into months in company/organization, in-house, abroad) and a summary of the main activities carried out, validated by the Course Coordinator. Study and research periods at organizations and abroad, where both are stipulated, must be carried out at different entities.

Recipients of scholarships funded under the PNRR - Extended Partnerships (PE) are also required to complete the entire doctoral program, training, and research in line with the themes and objectives funded by the scholarship projects, in collaboration with their respective scientific spokes and project leaders. They must also report their research activities, as required by the doctoral program and the project, by producing:

- a periodic summary of the main activities carried out, countersigned by the tutor and the scientific supervisor;
- appropriate documentation attesting to the activities carried out;
- a report indicating the time commitment.

At the end of each academic year, based on a detailed report on the activities and research carried out by each doctoral candidate, the board of professors decides on admission to the following year or proposes to the Rector the exclusion from the program. Upon completion of the program, doctoral candidates are required to submit to the board of professors a report on the activities undertaken during the doctoral course and any publications. The board of professors, with a reasoned decision, may also propose to the Rector the exclusion of the doctoral candidate from the program at any time. Public employees admitted to a doctoral program benefit, for the normal duration of the course, from leave as provided by collective bargaining or, if public employees under public law, from extraordinary leave for study reasons, compatible with the administration's needs, pursuant to Article 2 of Law No. 476 of August 13, 1984, and subsequent amendments, with or without allowances and unless explicitly waived, only if they are enrolled for the first time in a doctoral program, regardless of the disciplinary field. The right to a budget for research activities carried out in Italy and abroad, as provided in the preceding Article 9, paragraph 10, remains unaffected. Simultaneous enrollment in another doctoral program is prohibited.

The simultaneous enrollment in a doctoral program and in a specialized medical residency program with reserved access for physicians is incompatible in the case of receiving a scholarship funded under the provisions of D.M. 629/2024 and D.M. 630/2024, due to their qualification as non-waivable scholarships (see D.M. 301/2022 para. 3.3 letter E) and consequent prohibition on stacking them with the equally non-waivable financial support related to the medical specialist training contract.

Suspension of the doctoral program is allowed, upon request of the interested party, in case of:

a) mandatory maternity leave, under the provisions of legislative decree 26 March 2001, no. 151. Doctoral students are subject to maternity and paternity protection provisions as per the decree of the Ministry of Labor and Social Welfare dated 12 July 2007, published in Official Gazette no. 247 of 23 October 2007;

b) civil service, for a maximum period of one year.

Additionally, doctoral students may request suspension of the program, for a maximum duration of six months, for proven reasons provided by law and for documented serious health reasons.

Suspension exceeding thirty days for any of the above reasons entails the obligation to fully recover the interrupted periods of activity and, for scholarship holders, the cessation of scholarship payments or equivalent funding for the suspension period. The entire duration of the doctoral program cannot be reduced due to such suspensions, thus extending the program by a

period corresponding to the duration of the interruption.

The total periods of suspension under paragraph 10 and the extension periods under article 22, paragraphs 1 and 2, of the University Regulations for the discipline of doctoral research, may not exceed eighteen months in total, except in specific cases provided by law.

Doctoral candidates may conduct research activities abroad, subject to authorization from the Board of Professors, after consulting the supervisor. For periods not exceeding six months in total, coordinator approval, after consultation with the supervisor, is sufficient.

The interventions provided by legislative decree 29 March 2012, no. 68, are extended to doctoral candidates, according to the procedures established therein.

ARTICLE 11

(Doctoral Degree and Dissertation)

The doctoral degree, abbreviated as "Dott. Ric." or "Ph.D.", is awarded following a positive evaluation of a research thesis contributing to advancing knowledge or methodologies in the chosen field of study. The doctoral dissertation is written in Italian or English, or another language with prior authorization from the board of professors, and is accompanied by an abstract in English.

Within thirty days of the thesis discussion and approval, the University deposits an electronic copy of the thesis in the national archive as per Article 14, paragraph 1, of D.M. 226/2021, in a specific open-access section. With authorization from the board of professors, parts of the thesis may be made unavailable, possibly with a set time limit, in relation to the use of data protected by industrial secrecy or in cases of publications under submission, in accordance with current legislation. The obligation to deposit the thesis at the central national libraries of Rome and Florence remains unchanged.

Furthermore, the University archives and makes the full text of the doctoral thesis available for online consultation through the Open Access Institutional Repository and ensures the deposition of the thesis at the national libraries of Rome and Florence.

ARTICLE 12

(Access, Processing of Personal Data, and Procedure Manager)

Candidates are guaranteed the right to access documentation related to the competition procedure, in compliance with current regulations.

Personal data of candidates will be processed in accordance with Regulation (EU) 2016/679, the Code on the protection of personal data (Legislative Decree no. 196/2003 integrated and amended by Legislative Decree no. 101/2018), as well as the University Regulation on the protection of Personal Data (issued with Rectoral Decree no. 2088/2019). The collected data will be processed for the purposes of the current procedure for which they are provided and will be used exclusively for that purpose and, in any case, within the institutional activities of the University of Naples Federico II. The data subject has the rights specified in Articles 15 – 22 of the EU Regulation.

The Head of the Doctoral and Scholarship Office of the University of Naples Federico II is responsible for all matters related to this competition procedure that are not within the competence of the judging committee.

ARTICLE 13

(Publication of Competition Acts)

This competition announcement is advertised electronically on the University websites, *Euraxess* European portal, and the Ministry of Education, University, and Research (MUR); all related acts will be made public exclusively through electronic publication in the Official Notice Board of the University of Naples Federico II, available on the University website at www.unina.it.

Electronic publication on the Official Notice Board of the University of Naples Federico II constitutes official notification for all purposes, and no personal communications will be sent to interested parties.

The announcement will be displayed for 90 days, and related acts for 15 days.

ARTICLE 14 (Referral)

For matters not covered by this competition announcement, reference is made to the University Regulation governing doctoral programs and the provisions of Ministerial Decree n. 226/2021.

Area Didattica e Servizi agli Studenti

Il Dirigente Dott. Maurizio Tafuto

Unità organizzativa responsabile del procedimento: Ufficio Dottorato e Borse di Studio

Responsabile del procedimento: Il Capo dell'Ufficio Dott.ssa Concetta Bernardo