

Econ 306 Final Exam Penn State File PDF

econ 306 final exam penn state: A Comprehensive Guide to Success

Introduction

Econ 306, also known as Intermediate Microeconomics, is a core course offered at Penn State University that dives deep into the fundamental principles of microeconomic theory. As part of the economics undergraduate curriculum, this course equips students with analytical tools to understand how consumers and firms make decisions, how markets function, and how various factors influence economic outcomes. The final exam for Econ 306 is often considered one of the most important assessments in the course, reflecting students' grasp of complex concepts and their ability to apply them critically.

Given the significance of this exam, students frequently search for detailed information on its structure, preparation strategies, common topics, and resources specific to Penn State. This article aims to provide an SEO-optimized, comprehensive overview of the Econ 306 final exam at Penn State, offering valuable insights to help students excel.

Understanding the Econ 306 Final Exam at Penn State

Course Overview and Importance

Econ 306 at Penn State University covers a wide array of microeconomic topics including consumer choice theory, producer theory, market structures, and welfare economics. The final exam typically encompasses all these areas, serving as a cumulative assessment of students' understanding.

This exam is crucial for several reasons:

- It accounts for a significant portion of the final grade.
- It tests both theoretical understanding and practical application.
- It prepares students for advanced economics courses and real-world analytical challenges.

Exam Format and Structure

The structure of the Econ 306 final exam may vary slightly each semester, but generally, it includes:

- Multiple-choice questions (MCQs): Testing conceptual understanding and quick reasoning.
- Short-answer questions: Requiring explanations, calculations, or brief essays.
- Problem-solving exercises: Involving graph analysis, mathematical derivations, and data interpretation.
- Essay questions (occasionally): Demanding comprehensive analysis of economic scenarios.

Typical length and duration:

- Duration: 2 to 3 hours
- Number of questions: Usually between 10 and 20, depending on the instructor's preferences.

Key Topics Covered in the Econ 306 Final Exam

To succeed, students must master core topics that are often emphasized in the final exam. Here are the main areas to focus on:

1. Consumer Theory

- Utility functions and indifference curves
- Budget constraints
- Consumer choice optimization
- Effects of price changes (substitution and income effects)
- Demand functions and elasticity

2. Producer Theory

- Production functions
- Cost minimization and profit maximization
- Short-run and long-run costs
- Supply decision-making

3. Market Structures

- Perfect competition
- Monopoly and monopolistic competition
- Oligopoly and game theory applications
- Market failures and externalities

4. Welfare Economics

- Pareto efficiency
- Consumer and producer surplus
- Public goods and externalities
- government intervention effects

5. Advanced Topics (Optional depending on instructor)

- Information asymmetry
- Market failure and regulation
- Behavioral economics insights

Effective Study Strategies for the Penn State Econ 306 Final Exam

Success in the Econ 306 final exam hinges on strategic preparation. Here are proven techniques tailored for Penn State students:

1. Review Lecture Notes and Textbook Material

- Regularly revisit lecture slides and notes.
- Focus on understanding key definitions, theorems, and derivations.
- Cross-reference with the textbook to reinforce concepts.

2. Practice Past Exams and Sample Questions

- Obtain previous exam papers from course resources or instructors.
- Simulate exam conditions for timed practice.
- Analyze errors and clarify misconceptions.

3. Form Study Groups

- Collaborate with peers to discuss complex topics.
- Teach others to reinforce your own understanding.
- Share resources and problem sets.

4. Utilize Online Resources and Tutorials

- Watch educational videos on Khan Academy, Marginal Revolution, or Penn State's online platforms.
- Use online problem sets to practice application skills.

5. Focus on Problem-Solving Skills

- Work through textbook exercises and assignments.
- Understand step-by-step solutions to similar problems.
- Practice graphing and mathematical derivations.

Common Challenges and How to Overcome Them

Students often face specific hurdles when preparing for the Econ 306 final exam. Addressing these proactively enhances performance.

1. Complex Mathematical Derivations

- Break problems into smaller, manageable parts.
- Review mathematical concepts regularly.
- Seek help from instructors or tutoring centers if needed.

2. Applying Theory to Real-World Scenarios

- Use practice questions that involve case studies.
- Develop the ability to connect abstract concepts to practical examples.

3. Time Management During the Exam

- Allocate time proportionally based on question weight.
- Practice pacing during mock exams.

Resources for Penn State Econ 306 Students

Accessing the right materials is crucial for effective exam preparation. Penn State offers various

resources:

1. Course Website and Canvas Platform

- Lecture slides
- Practice quizzes
- Announcements and updates

2. Textbook and Supplementary Readings

- "Intermediate Microeconomics" by Hal R. Varian or other recommended texts
- Additional online articles and tutorials

3. Office Hours and Tutoring Centers

- Professors and teaching assistants provide clarifications.
- Penn State's Learning Center offers peer tutoring.

4. Study Guides and Past Exams

- Available through course archives or student forums.
- Useful for understanding exam patterns and question types.

Final Tips for Excelling in the Econ 306 Final Exam at Penn State

- Start preparing early to avoid last-minute cramming.
- Focus on understanding core concepts rather than rote memorization.
- Practice under timed conditions to simulate exam pressure.
- Clarify doubts promptly with instructors or peers.
- Stay calm and confident?your effort and preparation will reflect in your performance.

Conclusion

The Econ 306 final exam at Penn State is a comprehensive assessment that tests students' mastery of microeconomic principles. By understanding the exam structure, focusing on key topics, utilizing available resources, and adopting effective study strategies, students can significantly

improve their chances of success. Remember, consistent preparation and active engagement with the material are the keys to excelling in this crucial course component. With dedication and strategic planning, Penn State students can confidently approach their Econ 306 final exam and achieve their academic goals.

Econ 306 Final Exam Penn State: Your Ultimate Guide to Acing the Course

Preparing for the Econ 306 final exam at Penn State can feel overwhelming, especially given the complexity of topics covered in intermediate microeconomics. This guide aims to demystify the exam process, provide strategic study tips, and help you approach the test with confidence. Whether you're a first-time test-taker or looking to refine your exam strategy, understanding what to expect and how to prepare can make all the difference.

Understanding the Structure of Econ 306 at Penn State

Before diving into study tactics, it's essential to understand the structure and format of the Econ 306 final exam. Typically, this course covers various microeconomic concepts, including consumer theory, producer theory, market structures, game theory, and welfare economics. The final exam often assesses both conceptual understanding and problem-solving abilities.

Common Exam Format

- Multiple Choice Questions: Covering definitions, concepts, and basic calculations.
- Short Answer Questions: Requiring explanations of theories or models.
- Problem-Solving Questions: Involving calculations related to elasticity, consumer choice, profit maximization, etc.
- Graph Analysis: Interpreting and drawing economic graphs, such as budget lines, indifference curves, and supply/demand diagrams.

Exam Weighting and Duration

- The final exam usually lasts 2-3 hours.
- It may be weighted heavily (sometimes 30-40%) of your overall course grade.
- The exam covers all topics from the semester, with emphasis on recent material and core concepts.

Key Topics to Master for the Final Exam

To excel, you need a solid grasp of the main topics covered in Econ 306. Here's a breakdown of

the most critical areas:

Consumer Theory

- Budget constraints and preferences
- Utility functions and indifference curves
- Consumer equilibrium
- Income and substitution effects
- Elasticity of demand

Producer Theory

- Cost functions and production sets
- Profit maximization
- Short-run and long-run costs
- Supply functions

Market Structures

- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly and game theory basics

Welfare Economics

- Consumer and producer surplus
- Efficiency and market failures
- Externalities and public goods

Additional Topics

- Price controls and taxes
- Elasticity applications
- Behavioral economics concepts (if covered)

Effective Study Strategies for the Econ 306 Final Exam

Achieving a high score on your Econ 306 final exam at Penn State requires a strategic approach. Here are proven techniques to maximize your preparation:

- Review Lecture Notes and Textbook

- Revisit class notes, highlighting key definitions and diagrams.
- Read relevant textbook chapters, focusing on examples and end-of-chapter questions.
- Summarize concepts in your own words to reinforce understanding.

- Practice Past Exams and Sample Questions

- Obtain previous exams or sample questions from your instructor or course website.
- Time yourself while practicing to simulate exam conditions.
- Analyze mistakes and clarify misconceptions.

- Focus on Problem-Solving Skills

- Work through calculations related to elasticity, consumer choice, and profit maximization.
- Practice drawing and interpreting graphs.
- Develop a step-by-step approach for solving typical problems.

- Form Study Groups

- Collaborate with classmates to discuss difficult concepts.
- Teach each other topics to reinforce understanding.
- Share practice questions and quiz each other.

- Use Online Resources

- Engage with Penn State's online learning platforms.
- Watch tutorial videos on complex topics.
- Utilize flashcards for key terms and formulas.

Exam Day Tips and Strategies

The way you approach the exam day can significantly influence your performance. Here are some practical tips:

Before the Exam

- Ensure you have all necessary materials (e.g., calculator, pens, ID).
- Get a good night's sleep and eat a nutritious meal.
- Arrive early to settle in and reduce stress.

During the Exam

- Read all questions carefully before answering.
- Allocate time proportionally based on question weight.
- Start with questions you find easiest to build confidence.
- Use process-of-elimination for multiple-choice questions.
- Sketch graphs clearly and label all parts.
- Show all your work for problem-solving questions for partial credit.

After Completing the Exam

- Review your answers if time permits.
- Stay calm and avoid second-guessing excessively.

Additional Resources and Support

Penn State offers various resources to help you succeed in Econ 306:

- Office Hours: Meet with your instructor or teaching assistants for clarification.
- Study Sessions: Attend review sessions or workshops.
- Tutoring Services: Utilize campus tutoring centers for personalized help.
- Online Forums: Engage with student forums or groups dedicated to Econ 306.

Final Words of Advice

Success in your Econ 306 final exam at Penn State hinges on consistent preparation, understanding core concepts, and practicing problem-solving under timed conditions. Remember that economics is not just about memorization but about applying theories to real-world scenarios. Stay organized, keep a positive attitude, and approach your studying strategically. With diligent effort, you'll be well on your way to achieving a top grade and deepening your understanding of microeconomics.

Good luck!

Question Answer What topics are typically covered in the Econ 306 final exam at Penn State? The Econ 306 final exam at Penn State generally covers microeconomic principles, consumer and producer theory, market structures, game theory, and welfare economics. It's important to review lecture notes, textbook chapters, and past exams to prepare thoroughly. How can I effectively prepare for the Econ 306 final exam at Penn State? Effective preparation includes reviewing lecture slides, practicing past exam questions, understanding key concepts and formulas, forming study groups, and consulting with professors or TAs for clarification on difficult topics. Are there any specific resources recommended for studying for the Econ 306 final at Penn State? Yes, students should utilize the course textbook, Penn State's online learning platform (Canvas), supplementary study guides, and past exam archives. Attending review sessions and using online tutoring resources can also be beneficial. What is the typical format of the Econ 306 final exam at Penn State? The final exam usually includes multiple-choice questions, short answer problems, and essay-style questions. The exam duration is typically 2-3 hours, and it assesses understanding of core economic theories and their applications. When is the Econ 306 final exam scheduled at Penn State? The exact date and time of the Econ 306 final exam are announced by the university closer to the end of the semester, usually during the final exam week. Students should check Penn State's official exam schedule for updates. What are some common mistakes to avoid during the Econ 306 final exam at Penn State? Common mistakes include misreading questions, not managing exam time effectively, neglecting to show all work for calculations, and rushing through questions. Practice under timed conditions to improve pacing and accuracy. How can I improve my understanding of complex concepts for the Econ 306 final at Penn State? To deepen understanding, try teaching the concepts to peers, using online videos and tutorials, working through practice problems, and attending review sessions. Active engagement with the material helps clarify difficult topics.

Related keywords: Econ 306 Penn State, Economics final exam, Penn State economics course, Econ 306 study guide, Penn State econ exam review, economics exam questions, Econ 306 past exams, Penn State economics course material, Econ 306 lecture notes, Penn State econ class

STATE BY STATE ATLAS

State by state atlas is an invaluable resource for travelers, educators, researchers, and policymakers seeking detailed geographical and demographic information about the United States. Whether you're planning a road trip, constructing a comprehensive study, or simply exploring the diverse landscapes and cultures across the nation, a state by state atlas provides a detailed, organized, and accessible overview of each state's unique characteristics. This article delves into the importance of such atlases, what they typically include, and how they can be used effectively for various purposes.

Understanding the Importance of a State by State Atlas

A state by state atlas offers a granular view of the United States, breaking down complex geographical data into manageable, state-specific sections. It serves as a vital tool for:

- Travel Planning: Discovering points of interest, natural landmarks, and transportation routes within each state.
- Educational Purposes: Teaching students about regional differences, state histories, and physical geography.
- Research and Analysis: Providing demographic, economic, and environmental data essential for academic or policy research.
- Business Expansion: Helping companies identify target markets and logistical considerations across different states.

The value of a detailed state by state atlas lies in its ability to compile vast amounts of data into an organized format that is easy to navigate and interpret.

Key Features of a State by State Atlas

A comprehensive atlas typically includes several core components tailored to provide a holistic view of each state:

Geographical Layout

- State Boundaries: Clear demarcation of state borders.
- Major Cities and Towns: Locations of capital cities, metropolitan areas, and notable towns.
- Physical Features: Mountains, rivers, lakes, national parks, and other natural landmarks.
- Transportation Networks: Highways, railroads, airports, and ports.

Demographic Data

- Population size and density.
- Age distribution.
- Ethnic and cultural composition.
- Language prevalence.

Economic Indicators

- Major industries and economic drivers.
- Employment rates.
- Income levels.

Historical and Cultural Highlights

- Key historical sites.
- Cultural institutions.
- Festivals and traditions.

Environmental Information

- Climate zones.
- Protected areas and wildlife habitats.
- Environmental challenges and initiatives.

How to Use a State by State Atlas Effectively

Using a state by state atlas efficiently involves understanding how to navigate its features and interpret its data:

Navigating the Atlas

- Use the index or table of contents to locate specific states.
- Reference maps with legend explanations for understanding symbols and color codes.
- Utilize geographic coordinates for precise location identification.

Interpreting Data

- Compare demographic and economic data across states to identify trends.
- Examine physical features alongside population centers to understand regional differences.
- Use environmental information to assess climate and natural resource distribution.

Practical Applications

- Travel Planning: Map out routes, identify attractions, and plan accommodations.
- Educational Projects: Create presentations or reports based on regional data.
- Business Strategy: Analyze market potential and infrastructure capabilities.
- Environmental Conservation: Identify protected areas and environmental concerns.

Popular Types of State by State Atlases

Different atlases serve various purposes and audiences. Some popular types include:

- **Physical Atlases:** Focused on physical geography, terrain, and natural features.
- **Political Atlases:** Emphasize borders, administrative divisions, and political boundaries.
- **Historical Atlases:** Show historical boundaries, events, and transformations over time.
- **Demographic and Statistical Atlases:** Provide detailed population and economic data.
- **Digital Atlases:** Interactive maps and online resources with user-friendly features.

Benefits of Using a Digital State by State Atlas

While traditional print atlases are invaluable, digital atlases offer additional advantages:

- Interactivity: Zoom, click, and explore layers of data.
- Real-Time Updates: Access the latest demographic and environmental data.
- Customization: Select specific data points or regions relevant to your needs.
- Accessibility: Available on various devices, making information portable and easy to access.

Creating Your Own State by State Atlas

For educators, researchers, or enthusiasts interested in crafting a personalized atlas, consider the following steps:

- Define Your Purpose: Determine what data and features are most relevant.
- Gather Data Sources: Use government databases, geographic information systems (GIS), and

reputable online resources.

- Organize Information: Structure your atlas by states, with sections dedicated to key themes.
- Use Mapping Tools: Utilize GIS software or online mapping platforms to create customized maps.
- Incorporate Visuals: Add images, charts, and infographics to enhance understanding.
- Update Regularly: Keep your atlas current with the latest data and geographic changes.

Conclusion

A state by state atlas is an essential tool for understanding the rich diversity and complexity of the United States. It encapsulates physical geography, demographic trends, economic indicators, and cultural landmarks, providing a comprehensive picture of each state's unique identity. Whether in print or digital format, these atlases facilitate informed decision-making, enhance educational endeavors, and foster a deeper appreciation of the nation's regional differences. By leveraging the detailed insights offered by a state by state atlas, individuals and organizations can navigate, analyze, and celebrate the diversity of the United States more effectively than ever before.

State-By-State Atlas: A Comprehensive Guide to Navigating America's Diverse Geography

Creating a detailed, insightful, and comprehensive state-by-state atlas involves examining not just the geographic features but also the cultural, economic, historical, and environmental nuances that define each state. Such an atlas serves as an invaluable resource for students, travelers, researchers, educators, and policymakers. It offers a layered understanding of the United States, emphasizing regional diversity, unique landmarks, and the interconnectedness of states within the broader national fabric.

In this guide, we'll explore the multifaceted nature of a state-by-state atlas, diving deep into each aspect—from geographic features to cultural highlights—offering a rich, nuanced perspective that goes beyond simple maps.

Understanding the Purpose and Scope of a State-by-State Atlas

A state-by-state atlas aims to provide detailed geographic and socio-economic information for all 50 states, often supplemented with historical context, demographic data, and environmental insights. Its core goals include:

- Mapping geography: Topography, climate zones, natural resources, and land use.
- Highlighting landmarks: National parks, historic sites, and cultural attractions.
- Showcasing demographics: Population distribution, ethnic groups, and urbanization.
- Documenting infrastructure: Transportation networks, economic hubs, and urban centers.

- Environmental awareness: Conservation areas, wildlife habitats, and climate challenges.

By organizing information state-wise, the atlas presents a comparative view, highlighting regional differences and similarities that define the American landscape.

Geographic Diversity Across the States

Each state boasts unique geographic features shaped by natural processes and climatic conditions. Here's an overview:

Major Geographic Regions

- The Atlantic Coastal Plain: States like Florida, Georgia, and South Carolina feature flat, low-lying terrain, with fertile soils ideal for agriculture.
- The Appalachian Mountains: Stretching from Alabama to Maine, these mountains influence weather patterns and provide diverse ecosystems.
- The Great Plains: Covering states like Kansas, Nebraska, and Oklahoma, characterized by vast grasslands suitable for farming and ranching.
- The Rocky Mountains: Present in Colorado, Wyoming, and Montana, these rugged peaks define the western landscape.
- The Pacific Coast: California, Oregon, and Washington boast mountain ranges, coastal cliffs, and fertile valleys.
- The Desert Southwest: Arizona, Nevada, and New Mexico feature arid landscapes, unique desert flora, and geological formations.

Climate Zones and Their Impact

- Humid subtropical: Southeastern states experience hot summers, mild winters, and high humidity.
- Mediterranean: California's climate supports agriculture, vineyards, and diverse ecosystems.
- Continental: Midwest states have more extreme seasonal variations.
- Arid and semi-arid: Southwest states face droughts and water scarcity issues.
- Alpine: Mountainous regions experience cooler temperatures and snowfall, influencing tourism and ecology.

Implications: These geographic and climatic differences influence agriculture, urban development, resource management, and lifestyle choices across states.

Natural Resources and Environmental Features

Understanding what each state offers in terms of natural wealth is crucial:

- Minerals and Energy: Wyoming's coal deposits, Texas's oil fields, and Alaska's vast mineral reserves.
- Forests: Oregon and Washington for timber, Southern states for their pine and hardwood forests.
- Water Resources: Great Lakes states like Michigan and Wisconsin with abundant freshwater, contrasted with arid Southwest states facing water scarcity.
- Protected Areas: National parks like Yellowstone (Wyoming), Grand Canyon (Arizona), and Everglades (Florida) exemplify conservation efforts.

Environmental challenges such as climate change, pollution, and habitat loss are critical considerations documented in an atlas, offering insights into regional vulnerabilities and resilience strategies.

Cultural and Historical Highlights by State

Each state's geography is intertwined with its history and culture:

- Colonial and Indigenous Heritage: States like Massachusetts and Virginia have colonial roots, while states like Oklahoma and Alaska have rich Native American histories.
- Migration and Settlement Patterns: The Dust Bowl era in Oklahoma and Texas shaped migration flows, while California's Gold Rush drew diverse populations.
- Cultural Landmarks: Louisiana's jazz and Mardi Gras, New York's Broadway, and Nashville's country music scene.

An atlas can include cultural maps, historic sites, and demographic data to illustrate these narratives.

Economic Centers and Infrastructure

States differ markedly in their economic bases and infrastructural development:

- Industrial Powerhouses: Pennsylvania and Ohio with manufacturing roots.
- Technology Hubs: California's Silicon Valley, Washington's tech corridor.
- Agricultural States: Iowa's cornfields, Florida's citrus groves.
- Tourism Destinations: Nevada's Las Vegas, Hawaii's beaches, Colorado's ski resorts.

Transportation networks?interstates, ports, airports?are mapped to show connectivity and economic vitality.

Urban vs. Rural Dynamics

The distribution of urban centers versus rural areas influences political, social, and economic landscapes:

- Urbanization Trends: The growth of cities like New York, Los Angeles, and Houston.
- Rural Challenges: Access to services, economic diversification, and population decline in some regions.
- Regional Identities: The urban-rural divide is particularly pronounced in states like Texas, with its sprawling metropolitan areas and vast ranchlands.

An atlas offers insights into population density, land use, and infrastructure distribution.

Environmental Challenges and Conservation Efforts

States face various environmental issues:

- Climate Change: Rising sea levels affecting coastal states; droughts in the Southwest.
- Pollution: Industrial areas in the Midwest facing air and water quality issues.
- Wildlife Preservation: Endangered species habitats, migratory corridors.
- Sustainable Development: Renewable energy adoption in states like California and Texas.

Mapping conservation areas, pollution sources, and climate risks helps in understanding regional sustainability efforts.

Using a State-by-State Atlas for Education and Research

A detailed atlas is an educational tool that fosters:

- Geographic literacy: Understanding physical features, climate zones, and regional differences.
- Historical awareness: Connecting geography with historical events.
- Environmental stewardship: Recognizing regions vulnerable to climate change or resource depletion.
- Policy formulation: Informing decisions on infrastructure, conservation, and development.

It can be used in classrooms, research projects, travel planning, or policy debates.

Technological Integration and Interactive Features

Modern atlases incorporate digital and interactive elements, enhancing usability:

- GIS Layers: Allow users to toggle between physical, political, environmental, and demographic maps.
- Data Visualization: Charts, heatmaps, and graphs illustrating population trends, economic data, and environmental metrics.
- Virtual Tours: 3D maps and virtual reality features for exploring landmarks.
- Real-Time Data: Incorporating live weather, traffic, and environmental monitoring.

These features make the state-by-state atlas a dynamic, engaging resource.

Conclusion: The Significance of a State-by-State Atlas in Understanding America

A state-by-state atlas serves as a vital compass for navigating the complexities of the United States' geography, history, culture, and environment. It bridges the gap between raw data and meaningful understanding, illustrating how physical landscapes shape human activity and vice versa. Whether used for academic purposes, travel planning, environmental management, or policy-making, such an atlas offers a layered, comprehensive view of the nation's diversity and interconnectedness.

By delving deep into each state's unique features and overarching themes, the atlas fosters a greater appreciation for the geographical tapestry that makes America truly remarkable. It reminds us that every state, with its distinct characteristics, contributes to the larger story of the United States—a story written across mountains, plains, coasts, and cities, all mapped out in a detailed, accessible format.

Question What is a 'state by state atlas' and how is it used? A 'state by state atlas' is a detailed map collection that provides geographic, demographic, and statistical information specific to each U.S. state. It is used for research, travel planning, educational purposes, and understanding regional differences. **Answer** How can a state by state atlas help in understanding regional climate variations? A state by state atlas includes climate maps and data that illustrate temperature ranges, precipitation patterns, and other environmental factors, helping users compare and analyze climate differences across states. Are digital or online state by state atlases available for free? Yes, many online platforms and government websites offer free digital state by state atlases that provide interactive maps, demographic data, and various geographic tools. What kind of statistical data can I find in a state by state atlas? A state by state atlas typically includes data on population, economy,

education, health, transportation, and natural resources, offering a comprehensive overview of each state's characteristics. Can a state by state atlas be useful for businesses and marketers? Absolutely, businesses and marketers use state by state atlases to identify regional markets, analyze demographic trends, and plan expansion strategies based on geographic and economic data. What are the benefits of using a physical versus digital state by state atlas? Physical atlases provide a tangible, detailed reference that can be useful offline, while digital atlases offer interactive features, real-time updates, and easy access to extensive data, making them more versatile for modern needs.

Related keywords: geographic atlas, regional maps, U.S. states, county maps, state boundaries, topographic maps, demographic data, cartography, state geography, political maps

Read the full article online: [State by state atlas](#)