

## COURSE OUTLINE

### 1. Data about the study programme

1.1 Higher education institution	Transilvania University of Braşov
1.2 Faculty	Food and tourism
1.3 Department	Food and tourism engineering and management
1.4 Field of study <sup>1)</sup>	Engineering and management
1.5 Study level <sup>2)</sup>	Master
1.6 Study programme/ Qualification	Engineering and management in luxury hospitality (in English)

### 2. Data about the course

2.1 Name of course	Michelin-star kitchen engineering							
2.2 Course convenor	Conf. dr. ing. Cristina Maria CANJA							
2.3 Seminar/ laboratory/ project convenor	Conf. dr. ing. Cristina Maria CANJA							
2.4 Study year	2	2.5 Semester	3	2.6 Evaluation type	E	2.7 Course status	Content <sup>3)</sup>	SC
							Attendance type <sup>4)</sup>	EC

### 3. Total estimated time (hours of teaching activities per semester)

3.1 Number of hours per week	4	out of which: 3.2 lecture	2	3.3 seminar/ laboratory/ project	2
3.4 Total number of hours in the curriculum	56	out of which: 3.5 lecture	28	3.6 seminar/ laboratory/ project	28
Time allocation					hours
Study of textbooks, course support, bibliography and notes					20
Additional documentation in libraries, specialized electronic platforms, and field research					20
Preparation of seminars/ laboratories/ projects, homework, papers, portfolios, and essays					20
Tutorial					
Examinations					2
Other activities.....					7
<b>3.7 Total number of hours of student activity</b>			69		
<b>3.8 Total number per semester</b>			125		
<b>3.9 Number of credits<sup>5)</sup></b>			5		

### 4. Prerequisites (if applicable)

4.1 curriculum-related	<ul style="list-style-type: none"> <li>Completion of fundamental courses in food engineering and technology, including modules on intelligent systems and quality management.</li> </ul>
4.2 competences-related	<ul style="list-style-type: none"> <li>Ability to interpret and apply international quality standards such as HACCP and ISO in gastronomy.</li> <li>Familiarization with the basic techniques of molecular cuisine and the principles of sustainability in the hospitality industry.</li> </ul>

### 5. Conditions (if applicable)

5.1 for course development	<ul style="list-style-type: none"> <li>Access to advanced technological equipment used in Michelin kitchens, such as sous-vide, Thermomix, smoking equipment, etc.</li> <li>Recommended bibliography.</li> </ul>
5.2 for seminar/ laboratory/	<ul style="list-style-type: none"> <li>Availability of laboratory spaces equipped with equipment specific to modern</li> </ul>

project development	<p>culinary processes.</p> <ul style="list-style-type: none"> <li>Ensuring access to premium quality raw materials for practical applications.</li> </ul>
---------------------	---

## 6. Specific competences and learning outcomes

Professional competences	<p><b>Cp1. Manage and plan the various resources, such as human resources, budget, timeline, deliverables and quality required for a specific project, and monitor the progress of the project to achieve a specific objective within a given timeframe and budget.</b></p> <p>L.O.1.1. Graduates will be able to use technologies such as sous-vide, spherification and 3D printing to optimize food preparation and create innovative preparations.</p> <p>L.O.1.2. Graduates will demonstrate the ability to integrate precision cooking technologies into operational flows to ensure the consistency and quality of final products.</p> <p>L.O.1.3. Graduates will have skills in the selection and use of advanced culinary equipment to support innovation and efficiency in luxury kitchens.</p> <p><b>Cp2. Provides advice to the industrial units visited on how to better supervise production to ensure correct diagnosis and resolution of manufacturing problems.</b></p> <p>L.O.2.1. Graduates will acquire skills to implement "zero waste" practices and promote sustainability in the sourcing and use of ingredients.</p> <p>L.O. 2.2. Graduates will be able to design menus that combine aesthetics, taste, and sustainability to enhance the customer experience.</p> <p>L.O.2.3. Graduates will have the ability to optimize warehousing and inventory management processes to minimize losses and increase operational efficiency.</p>
Transversal competences	<p><b>Ct1. Organize the team.</b></p> <p>L.O.1.1. Graduates will be able to coordinate teams in high-pressure environments, promoting collaboration and effective problem solving.</p> <p>L.O.1.2. Graduates will have the ability to communicate clearly and constructively with staff and customers, ensuring a high-quality experience.</p> <p><b>Ct4. Manage quality related aspects.</b></p> <p>L.O.2.1. Graduates will demonstrate the ability to analyze and improve culinary processes using principles of sustainability and technological innovation.</p> <p>L.O.2.2. Graduates will acquire skills to adapt to emerging trends in gastronomy and to integrate them into professional practice.</p>

## 7. Course objectives (resulting from the specific competences to be acquired)

7.1 General course objective	<ul style="list-style-type: none"> <li>To train skills in process engineering in elite kitchens.</li> <li>To develop skills in planning and organizing Michelin-standard kitchens.</li> <li>Integrate technological innovation with advanced culinary techniques.</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>Advanced skills of culinary techniques (sous-vide, gelling, smoking, spherification, etc.).</li> <li>Implementing the concept of "zero waste" in kitchens.</li> </ul>

- Developing a creative and sustainable menu.
- Optimizing operational flows for maximum efficiency.

## 8. Content

8.1 Course	Teaching methods	Number of hours	Remarks
1. Introduction to Michelin standards: history and evaluation criteria 1.1 The origin of the Michelin Guide and its impact on world gastronomy. 1.2 Michelin star criteria: what matters most? 1.3 The role of Michelin inspectors and how to assess them	Interactive lectures, narrative exposition, debates, case study, brainstorming	4	
2. Innovative technologies used in Michelin-star kitchens 2.1 Advanced equipment: sous-vide, pacojet, dehydrators. 2.2 The role of food 3D printing and artificial intelligence in kitchens. 2.3 Temperature control and precision cooking technologies.	Interactive lectures, narrative exposition, debates, case study, brainstorming	4	
3. Operations management and efficient workspace organization 3.1 Methods of organization: mise en place and 5S principles in the kitchen. 3.2 Team management: leadership and effective communication in high-pressure environments. Workspace planning for maximum productivity.	Interactive lectures, narrative exposition, debates, case study, brainstorming	4	
4. Menu design: the balance between taste, aesthetics and sustainability 4.1 Taste psychology: how we combine flavours to create a unique experience. 4.2 Design of a themed menu for multisensory experiences. 4.3 Choosing sustainable and local ingredients.	Interactive lectures, narrative exposition, debates, case study, brainstorming	8	
5. Hygiene and food safety at standards of excellence 5.1 International standards and HACCP procedures in top kitchens. 5.2 The food route: from storage to serving. 5.3 Contamination management and safety in kitchens	Interactive lectures, narrative exposition, debates, case study, brainstorming	4	
6. Psychology of the high-end restaurant customer 6.1 Analysis of Michelin customer expectations: personalized services and details. 6.2 Creating a memorable atmosphere: light, sound and ambience. 6.3 Customer feedback: its role in continuous	Interactive lectures, narrative exposition, debates, case study, brainstorming	4	

improvement.			
Bibliography			
1. Bocuse, Paul. The Complete Bocuse. 2020			
2. Blumenthal, Heston. The Fat Duck Cookbook. 2022			
3. Adria, Ferran. The Family Meal: Home Cooking with Ferran Adrià. 2018			
4. Escoffier, Auguste. Guide Culinaire. 2020			
8.2 Seminar/ laboratory/ project	Teaching-learning methods	Number of hours	Remarks
1. Application of advanced cooking techniques 1.1 Preparation of proteins by sous-vide and testing of different textures. 1.2 Application of molecular techniques: specification, foams, gels. 1.3 Combining modern technologies with traditional methods (e.g., cooking over an open fire).	Hands-on demonstrations, collaborative learning, experiential learning	8	
2. Sensory testing: evaluation of texture, taste and presentation 2.1 Plating techniques and colour balance. 2.2 Testing Taste and Texture Perceptions: How to 2.3 Meet Varied Customer Needs. 2.4 Developing a visual signature for each dish	Hands-on demonstrations, collaborative learning, experiential learning	4	
3. Development of a thematic menu and its evaluation 3.1 Creating a unique menu concept (e.g.: seasonal, story-based). 3.2 Testing and refining recipes through feedback. 3.3 Presentation of the menu and simulation of a complete service.	Hands-on demonstrations, collaborative learning, experiential learning	8	
4. Simulation of a Michelin kitchen: organization and coordination 4.1 Creating a functional team and distributing responsibilities. 4.2 Pressure management during a "live" simulation. 4.3 Performance analysis and process improvement.	Hands-on demonstrations, collaborative learning, experiential learning	8	
Bibliography			
1. Bocuse, Paul. The Complete Bocuse. 2020			
2. Blumenthal, Heston. The Fat Duck Cookbook. 2022			
3. Adria, Ferran. The Family Meal: Home Cooking with Ferran Adrià. 2018			
4. Escoffier, Auguste. Guide Culinaire. 2020			

**9. Correlation of course content with the demands of the labour market (epistemic communities, professional associations, potential employers in the field of study)**

The discipline Kitchen Engineering with Michelin stars correlates its contents with the expectations of epistemic communities, professional associations and employer's representative of the field of gastronomy of excellence, providing students with advanced skills in technological and conceptual innovation of culinary dishes, aligned with

international standards of fine dining and sustainability.

## 10. Evaluation

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of the final grade
10.4 Course	Active participation in courses and practical work		20%
	The master's student must demonstrate an understanding of the essential aspects of the course (having as sources the course material and bibliography)	Written Exam - Theory and Case Studies	40%
10.5 Seminar/ laboratory/ project	Development and presentation of a complete menu	Final project	40%
10.6 Minimal performance standard			
The minimum performance standard for the Michelin-starred Cuisine Engineering discipline requires students to demonstrate advanced skills in the application of modern culinary technologies, dish innovation, artistic presentation and adherence to the standards of excellence and sustainability specific to luxury gastronomy.			

This course outline was certified in the Department Board meeting on 12/09/2024 and approved in the Faculty Board meeting on 12/09/2024

- 1) Field of study – select one of the following options: Bachelor / Master / Doctorat (to be filled in according to the forceful classification list for study programmes);
- 2) Study level – choose from among: Bachelor / Master / Doctorat;
- 3) Course status (content) – for the Bachelor level, select one of the following options: **FC** (fundamental course) / **DC** (course in the study domain) / **SC** (speciality course) / **CC** (complementary course); for the Master level, select one of the following options: **PC** (proficiency course) / **SC** (synthesis course) / **AC** (advanced course);

- 4) Course status (attendance type) – select one of the following options: **CPC** (compulsory course)/ **EC** (elective course)/ **NCPC** (non-compulsory course);
- 5) One credit is the equivalent of 25 study hours (teaching activities and individual study).